

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to FIG. 1. This sheet replaces the original sheet that included FIG. 1. On this replacement sheet, FIG. 1 does not contain element 144.

REMARKS

In the Office Action mailed March 9, 2006, the Examiner objected to the information disclosure statement and the drawings and rejected claims 1-18 under Section 102 and/or 103. By this paper, the Applicant has added new claims 19-28 and amended claims 1 and 10 to expedite allowance of the present application. These amendments do not add any new matter. In view of the foregoing amendments and the following remarks, the Applicant respectfully requests withdrawal of the objections and rejections and allowance of claims 1-28.

Information Disclosure Statement

In the most recent Office Action, the Examiner objected to the Information Disclosure Statement because:

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, “the list may not be incorporated into the specification but must be submitted in a separate paper.” Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Office Action, page 2.

The Applicant apologizes for this oversight. Accordingly, to overcome this objection, the Applicant is filing an Information Disclosure Statement in accordance with 37 C.F.R. § 1.97 in conjunction with this Response to Office Action. In view of this Information Disclosure Statement, the Applicant respectfully requests withdrawal of any objection regarding the

references cited in the present application but not included on the previously filed Information Disclosure Statement.

Drawings

In the Office Action, the Examiner objected to the drawings as “failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: element 144, Figure 1.” The Applicant apologizes for this oversight and has provided a replacement drawing sheet containing a revised Figure 1 not including element 144. In view of this corrected drawing sheet, the Applicant respectfully requests withdrawal of objection to the drawings.

Rejection under 35 U.S.C. § 102

The Examiner rejected claims 1, 4, 6, 7, 9, 10, 13, 15, 16, and 18 under 35 U.S.C. § 102 as being anticipated by Conlon et al. (U.S. Patent No. 4,960,126, hereafter referred to as “the Conlon reference”). The Applicant respectfully traverses this rejection.

Legal Precedent

Anticipation under Section 102 can be found only if a single reference shows exactly what is claimed. *See Titanium Metals Corp. v. Banner*, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under Section 102, every element of the claimed invention must be identically shown in a single reference. *See In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). That is, the prior art reference must show the *identical invention “in as complete detail as*

contained in the ... claim" to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989) (emphasis added). Thus, for anticipation, the cited reference must not only disclose all of the recited features but must also disclose the *part-to-part relationships* between these features. *See Lindermann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 486 (Fed. Cir. 1984). Accordingly, Applicants need only point to a single element or claimed relationship not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter. A *strict correspondence* between the claimed language and the cited reference must be established for a valid anticipation rejection.

Moreover, Applicants submit that, during patent examination, the pending claims must be given an interpretation that is *reasonable* and *consistent* with the specification. *See In re Prater*, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969); *In re Morris*, 44 U.S.P.Q.2d 1023, 1027-28 (Fed. Cir. 1997); see also M.P.E.P. § 2111 (describing the standards for claim interpretation during prosecution). Indeed, the *specification* is "the primary basis for construing the claims." *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (citations omitted). It is usually dispositive. *See id.* Interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *See In re Cortright*, 49 U.S.P.Q.2d 1464, 1468 (Fed. Cir. 1999); *see also* M.P.E.P. § 2111. That is, recitations of a claim must be read as they would be interpreted by those of ordinary skill in the art. *See Rexnord Corp. v. Laliram Corp.*, 60 U.S.P.Q.2d 1851, 1854 (Fed. Cir. 2001); *see also* M.P.E.P. § 2111.01. In summary, an Examiner, during prosecution, must interpret a claim recitation as one of ordinary skill in the art

would reasonably interpret the claim in view of the specification. *See In re American Academy of Science Tech Center*, 70 U.S.P.Q.2d 1827 (Fed. Cir. 2004).

Deficiencies of the Rejection

The Applicant respectfully asserts that independent claims 1 and 10, as amended, are not anticipated by the Conlon reference. For example, independent claim 1, as amended, recites “calculating weights for an ensemble averager *from a continuous weighting function* using said assessment of signal quality.” (Emphasis added). Independent claim 10, as amended, recites “means for selecting weights for an ensemble averager *from a continuous weighting function* using said assessment of signal quality.” (Emphasis added).

As the Examiner noted, the Conlon reference is directed towards a system that can be employed to ensemble average a waveform. Conlon, col. 9, lines 22-25. However, in sharp contrast to the above-recited claim features, the Conlon reference discloses a system where the ensemble averaging employs a discrete (*i.e.*, non-continuous) weighting function. Conlon, col. 10, lines 22-49; *see also* FIG. 14. More specifically, as described in the Conlon reference, based on patient heart rate and/or level of perfusion, the weight of either 1/2, 1/4, 1/8, or 1/16 is assigned. *Id.* For example, if low perfusion is detected and the patient’s heart rate is below 60 beats per minute (“BPM”), the apparatus disclosed in the Conlon reference would assign a weight of 1/8. *Id.* In other words, in complete opposition to the continuous weighting function recited in independent claims 1 and 10, the Conlon reference discloses a plurality of weighting values that can be employed to *roughly* assign a few discrete weighting values based on a

patient's characteristics. Clearly, however, this system does not employ a "continuous weighting function," as recited in independent claims 1 and 10. For at least this reason, the Applicant respectfully asserts that the Conlon reference cannot anticipate independent claims 1 and 10, as amended. Accordingly, the Applicant respectfully requests withdrawal of the pending Section 102 rejection and allowance of independent claims 1 and 10, as well as those claims that depend therefrom.

Rejections under 35 U.S.C. § 103

The Examiner rejected claims 2, 3, 11, and 12 under 35 U.S.C. § 103(a) as being unpatentable over the Conlon reference as applied to claims 1 and 10, further in view of Mortz (U.S. Patent No. 5,934,277, hereafter referred to as "the Mortz reference"). In addition, the examiner rejected claims 5 and 14 under 35 U.S.C. § 103(a) as being unpatentable over the Conlon reference as applied to claims 1, 4, and 10. Additionally, the Examiner rejected claims 1, 8, 10, and 17 under 35 U.S.C. § 103(a) as being unpatentable over Corenman et al. (U.S. 4,911,167, hereafter referred to as "the Corenman reference").

Legal Precedent

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (B.P.A.I. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). The mere fact that references can be combined or modified does not render the resultant combination

obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d. 1430 (Fed. Cir. 1990). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985).

Claims 2, 3, 11, and 12

The Applicant respectfully asserts that the Examiner has not established a *prima facie* case of obviousness with regard to claims 2, 3, 11, and 12. As stated above, the Examiner rejected claims 2, 3, 11, and 12 as obvious over the Conlon reference in view of the Mortz reference. However, as described above, the Conlon reference clearly does not disclose those claim features attributed to it by the Examiner. In view of this deficiency, the Examiner's Section 103 rejections of claims 2, 3, 11, and 12, which are based upon the Examiner's mistaken interpretation of the Conlon reference, cannot establish a *prima facie* case of obviousness. As such, the Applicant respectfully requests withdrawal of the Section 103 rejections of claims 2, 3, 11, and 12.

Claims 5 and 14

The Applicant respectfully asserts that the Examiner has not established a *prima facie* case of obviousness with regard to claims 5 and 14. As stated above, the Examiner rejected claims 5 and 14 as obvious over the Conlon reference. However, as described above, the Conlon

reference clearly does not disclose those claim features attributed to it by the Examiner. In view of this deficiency, the Examiner's Section 103 rejections of claims 5 and 14, which are based upon the Examiner's mistaken interpretation of the Conlon reference, cannot establish a *prima facie* case of obviousness. As such, the Applicant respectfully requests withdrawal of the Section 103 rejections of claims 5 and 14.

Claims 1, 8, 10, and 17

The Applicant respectfully asserts that independent claims 1 and 10, as amended, are not unpatentable over the Corenman reference. For example, independent claim 1, as amended, recites "calculating weights for an ensemble averager *from a continuous weighting function* using said assessment of signal quality." (Emphasis added). Independent claim 10, as amended, recites "means for selecting weights for an ensemble averager *from a continuous weighting function* using said assessment of signal quality." (Emphasis added).

In sharp contrast, similar to the Conlon reference described above, the Corenman reference discloses ensemble averaging using a plurality of discrete weighting values. More specifically, as the Examiner noted in page 5 of the Office Action, the Corenman reference discloses a system that preferably assigns a discrete weight of 1/6 to the most recent information and discrete weight of 5/6 to historical weight-averaged composite information. *Id.* Additionally, the Corenman reference also discloses employing discrete weights of 1/2, 1/4, 1/8, and so-forth. *Id.* As none of the sections of the Corenman reference cited by the Examiner disclose anything other than a plurality of *discrete* weighting values, the Applicant respectfully

asserts that the Examiner has not established a *prima facie* case of obviousness against independent claims 1 or 10 based on the Corenman reference. Accordingly, the Applicant respectfully requests withdrawal of the pending Section 103 rejection and allowance of claims 1, 8, 10, and 17.

New Claims

The Applicant respectfully requests that new claims 19-28 be added. Furthermore, the Applicant respectfully asserts that new claims 19-28 are patentable over the references currently cited by the Examiner. For example, independent claim 19 recites “a pulse oximeter configured to...calculate at least one weight for an ensemble average using a *continuously variable weighting function*.” (Emphasis added). Dependent claim 22 recites “the pulse oximetry system of claim 19, wherein the pulse oximeter is configured to calculate the at least one weight *independent of an ECG signal*.” (Emphasis added). Dependent claim 23 recites the “pulse oximetry system of claim 19, wherein the pulse oximeter is configured to calculated the at least one weight based on a *variability of a ratio-of-ratios over a time*.” (Emphasis added). Dependent claim 24 recites the “pulse oximetry system of claim 19, wherein the pulse oximeter is configured to calculate the at least one weight *based on a pulse qualification score*.” (Emphasis added). Independent claim 26 recites a “pulse oximetry system configured to...reduce one or more ensemble averaging weights *in response to receiving the indication of arrhythmia* to create a second set of ensemble averaging weights.” (Emphasis added). Independent claim 27 recites a “tangible machine readable medium comprising...code adapted to determine ensemble averaging weights based on a *continuously variable weighting function*.” (Emphasis added). For

at least the reasons set forth above, the Applicant respectfully asserts that new claims 19-28 are allowable.

Payment of Fees and General Authorization for Extensions of Time

In accordance with 37 C.F.R. § 1.136, the Applicant hereby requests a two month extension of time and attaches the appropriate form PTO-2038 for payment of the requisite fee of **\$450.00**. Further, pursuant to this Response, the Applicant has added three independent claims and seven dependent claims for a total of 28 claims with 5 independent claims. Payment of the requisite fee of **\$800.00** for the additional claims is also to be charged to the attached form PTO-2038. Moreover, the Applicant also hereby provides a general authorization to treat this and any future reply requiring an extension of time as incorporating a request therefore, and the Applicant authorizes the Commissioner to charge the appropriate fee for any extension of time to Deposit Account No. 06-1315; Order No. TYHC:0150/FLE.

Conclusion

In view of the remarks set forth above, Applicant respectfully requests reconsideration of the Examiner's rejections and allowance of all pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: August 9, 2006



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Attachments: Replacement Drawing Sheet
Information Disclosure Statement